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ABSTRACT

This curriculum outline for secondary automotive mechanics is structured around Louisiana's Vocational-Technical Automotive Mechanics Curriculum. The curriculum is composed of 16 units of instruction, covering the following topics: benchwork, fundamentals of automotive engines, preventive maintenance, automotive brakes, steering and front suspension, drive train and rear suspension, manual transmissions, automatic transmissions, fuel systems, accessories, complete automotive service, welding, and mathematics. The outline lists the instructional units to be taught for each year of a four-year secondary automotive mechanics program for either two-hour block or three-hour block courses. The curriculum outline also describes the curriculum and lists related study assignments and job sheets that are to be used with each unit. In addition, a list of required texts and resource materials is included. The curriculum outline was prepared to provide continuity between the secondary automotive mechanics program and automotive mechanics programs on the postsecondary levels. (KC)

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AUTOMOTIVE MECHANICS CURRICULUM OUTLINE FOR SECONDARY SCHOOLS

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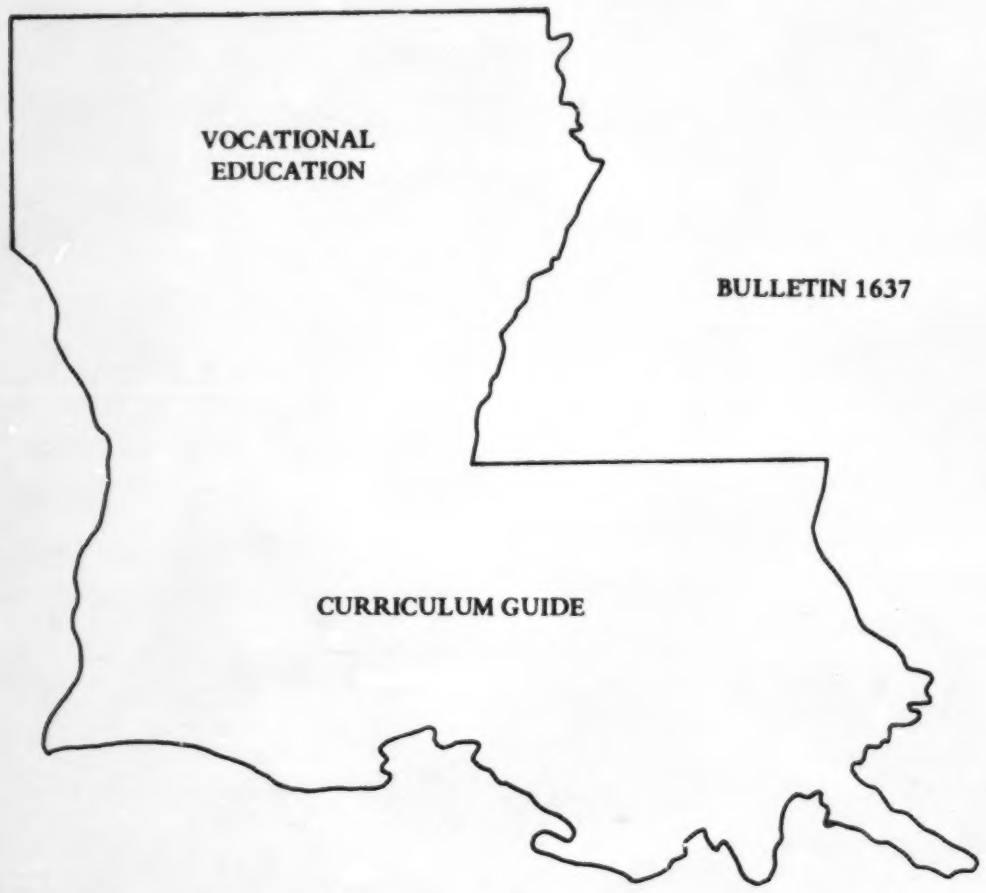

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Issued By

Louisiana State Department of Education

J. KELLY NIX
State Superintendent

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STATE OF LOUISIANA

DEPARTMENT OF EDUCATION

BULLETIN 1637

AUTOMOTIVE MECHANICS
CURRICULUM OUTLINE
SECONDARY

Issued by

Office of Vocational Education

N. J. Stafford, Jr., Ed.D.
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J. KELLY NIX
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AUG. O 1 1981

FOREWORD

In our highly technical and rapidly changing industrial world of today, reference books, materials and techniques constantly become outdated. Keeping vocational curricula current with industry needs is imperative if vocational education is to meet its objectives.

In order to eliminate duplication of time and effort, this curriculum guide was developed to articulate the secondary and post-secondary automotive mechanics programs.

J. KELLY NIX
State Superintendent

ACKNOWLEDGMENTS

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INTRODUCTION

The following curriculum outline for Secondary Automotive Mechanics is structured around Louisiana's Vocational-Technical Automotive Mechanics Curriculum. This curriculum is composed of sixteen (16) units of instruction. The outline lists the instructional units to be taught for each year of a Secondary Automotive Mechanics program for either a Two-Hour Block or Three-Hour Block Program. By utilizing the available curriculum materials, the instructor has an opportunity to provide better instruction to students by following a proven curriculum.

ABOUT THE CURRICULUM

Each unit contains Related Study Assignments, Assignment Tests, Test Answers and Job Sheets. These are structured as follows:

Related Study Assignment: Contains an assignment objective, introduction listing technical information, list of resource reading assignments, and study questions that help meet the objective.

Assignment Test: Written test to measure student's achievement of the Related Study Assignment objective.

Test Answers: Provided for each assignment test for the instructor's use only.

Job Sheets: Job sheets are an important segment of each unit. The instructor should be able to, and in most situations should, demonstrate the skills outlined in the job sheets. Procedures outlined in the job sheets give direction to the skill being taught and allow both student and instructor to check student progress toward the accomplishment of the skill. A job objective, along with the necessary tools, materials and equipment and safety precautions, are also given. Job sheets provide a ready outline for a student to follow if he/she has missed a demonstration. Job sheets also furnish potential employers with a picture of the skills being taught and the performances she/he might reasonably expect from a person who has had this training.

The materials are primarily designed to be used as individualized instructional materials or for group structured teaching. A curriculum structured around these materials will provide continuity between secondary and post-secondary programs.

AUTOMOTIVE MECHANICS
SECONDARY CURRICULUM

		3-Hour Block	2-Hour Block
FIRST YEAR			
Unit I	Benchwork	60	40
Unit II	Fundamentals of Automotive Engines	60	40
Unit III	Preventive Maintenance	120	80
Unit IV	Automotive Brakes	60	40
Unit IX	Fuel Systems	110	60
Unit X	Electrical Systems (Fundamentals)	115	90
Unit XVI	Mathematics (Integrated as Needed)	15	10
		540	360
SECOND YEAR			
Unit X	Electrical Systems	245	160
Unit VI	Drive Train and Rear Suspension R.S.A. 2 (only)		
Unit VII	Manual Transmissions R.S.A. 1 and R.S.A. 2 (only)		
Unit VIII	Automatic Transmissions R.S.A. 1 (only)	90	60
Unit XIV	Complete Automotive Service	30	30
Unit IV	Automotive Brakes	60	40
Unit IX	Fuel Systems	100	60
Unit XVI	Mathematics	15	10
		540	360
THIRD YEAR			
Unit V	Steering and Front Suspension	60-120	60
Unit XII	Air Conditioning and Heating Systems	60	40
Unit VI	Drive Train and Rear Suspension	120	50
Unit XI	Engine Repair		
Unit XIII	Accessories	240	
	Selective Studies		210
		540	360
FOURTH YEAR			
	Advanced Systems—Must be approved by State Department of Education	540	360

LOUISIANA VOCATIONAL-TECHNICAL EDUCATION
AUTOMOTIVE MECHANICS CURRICULUM
Unit Outline

Unit I	Benchwork
Unit II	Fundamentals of Automotive Engines
Unit III	Preventive Maintenance
Unit IV	Automotive Brakes
Unit V	Steering and Front Suspension
Unit VI	Drive Train and Rear Suspension
Unit VII	Manual Transmissions
Unit VIII	Automatic Transmissions
Unit IX	Fuel Systems
Unit X	Electrical Systems
	Part A Basic Electricity
	Part B Ignition Systems
	Part C Starting Systems
	Part D Charging Systems
	Part E Chassis Electrical Systems
Unit XI	Engine Repairs
Unit XII	Air-Conditioning and Heating Systems
Unit XIII	Accessories
Unit XIV	Complete Automotive Service
Unit XV	Welding
Unit XVI	Mathematics

UNIT I—BENCHWORK

R.S.A.	1	Orientation and Safety in the Shop (Safety Test)
R.S.A.	2	Hand Tools
Job	2	Identify Hand Tools
R.S.A.	3	Measuring Devices
Job	3	Use of Measuring Devices
R.S.A.	4	Fastening Devices
Job	4	Identify Fastening Devices
R.S.A.	5	Grinding and Sharpening Tools
Job	5	Drill Grinding Gauge
Job	5A	Sharpen a Twist Drill
Job	5B	Grinding and Sharpening Tools
R.S.A.	6	Drilling Equipment
Job	6	Drilling Exercises
R.S.A.	7	Taps and Dies
Job	7	Make Internal Thread Block
Job	7A	Make Steering Wheel Puller (Optional)
R.S.A.	8	Installation and Removal of Studs
Job	8	Remove a Broken Stud
R.S.A.	9	Repair of Damaged Internal Threads
Job	9	Install Insert
Job	9A	Install Heli-Coil (Optional)
R.S.A.	10	Soldering
Job	10	Solder Wire Splice
Job	10A	Solder Job (Instructor's Choice)
R.S.A.	11	Tubing
Job	11	Bending, Cutting, and Flaring Tubing

UNIT II—FUNDAMENTALS OF AUTOMOTIVE ENGINES

R.S.A.	1	Fundamentals of Engines
Job	1	Identify Engine Parts
R.S.A.	2	Measurement and Performance of Engines
Job	2	Measure Engine Parts

UNIT III—PREVENTIVE MAINTENANCE

R.S.A.	1	Engine Lubricating Systems
Job	1	Lift an Automobile With Jacks
Job	1A	Drain Crankcase, Replace Filter and Refill Crankcase
R.S.A.	2	Drive Train Lubricants
Job	2	Check Drive Train Lubricant Levels
R.S.A.	3	Chassis Lubrication
Job	3	Lubricate Automobile
R.S.A.	4	Battery Service
Job	4	Service Battery and Battery Box
R.S.A.	5	Air Cleaners
Job	5	Service Air Cleaners
R.S.A.	6	Cooling Systems
Job	6	Test and/or Replace Antifreeze
Job	6A	Service Fan Belt and Fan Clutch
Job	6B	Service Cooling System Hoses, Thermostat, and Water Pump
Job	6C	Pressure Test Radiator and Cap and Service as Needed
R.S.A.	7	Positive Crankcase Ventilation System
Job	7	Service PCV Valve System
Job	7A	Service Emission Control Hoses
R.S.A.	8	Heat Control Valve
Job	8	Service Heat Control Valve and Exhaust Gasket Flange
R.S.A.	9	Mufflers and Tail Pipes
Job	9	Install Mufflers and Tail Pipes and Adjust Brackets
R.S.A.	10	Headlights and Taillights
Job	10	Install Sealed Beam Headlights and Aim
Job	10A	Install Dimmer Switch (Optional)
Job	10B	Install Taillight Bulb
Job	10C	Install Stoplight Switch
Job	10D	Service Turn Signal and Backup Lightbulbs
Job	10E	Check and Install Fuse
R.S.A.	11	Front Wheel Service
Job	11	Service Front Wheel Bearings—Drum
Job	11A	Service Front Wheel Bearings—Disc
R.S.A.	12	Automotive Tires
Job	12	Tire Service
Job	12A	Static Balance Tires

UNIT IV—AUTOMOTIVE BRAKES

R.S.A.	1	Principles of Hydraulic Brake Systems
Job	1	Bleed Hydraulic Brake System and Replenish Brake Fluid (Manual)
Job	1A	Bleed Hydraulic Brake System and Replenish Brake Fluid (Pressure)
Job	1B	Bleed Hydraulic Brake System and Replenish Brake Fluid (Bleed Disc Brakes)
R.S.A.	2	Hydraulic Brake Components and Skid Control
Job	2	Disassemble and Reassemble Single and Duel Master Cylinder (Mock Up)
Job	2A	Remove and Recondition a Master Cylinder (Single)
Job	2B	Remove and Recondition a Master Cylinder (Dual)
Job	2C	Remove, Recondition and Replace Wheel Cylinder
Job	2D	Replace Broken Brake Lines
R.S.A.	3	Brake Shoes and Linings
Job	3	Replace Brake Shoes of an Automobile
R.S.A.	4	Brake Drums
Job	4	Recondition Brake Drums
R.S.A.	5	Power Brakes
Job	5	Become Familiar with a Power Brake Unit (Mock Up)
R.S.A.	6	Disc Brakes
Job	6	Overhaul a Complete Disc Brake System (Hydraulic System Included)
Job	6A	Recondition Disc of Disc Brakes
R.S.A.	7	Complete Brake System
Job	7	Overhaul a Complete Brake System

UNIT V—STEERING AND FRONT SUSPENSION

R.S.A.	1	Steering Linkage and Front-End Suspension Assemblies
Job	1	Remove and Replace Tie Rod Assemblies
Job	1A	Remove and Replace Idler Arm
Job	1B	Remove and Replace Front Coil Spring
Job	1C	Remove and Replace Torsion Bar and Adjust Riding Height
Job	1D	Disassemble, Service and Reassemble Front-End Suspension Systems
R.S.A.	2	Operating Principles of Shock Absorbers and Stabilizers
Job	2	Remove and Replace Front Shock Absorbers
Job	2A	Remove and Replace Front Stabilizers
R.S.A.	3	Principles of Front-End Geometry
Job	3	Check Suspension Components and Wheel Runout
Job	3A	Align Front End
R.S.A.	4	Wheel Balancing
Job	4	Balance Wheels On Vehicle
Job	4A	Balance Wheels Off Vehicle

UNIT V–STEERING AND FRONT SUSPENSION: Continued

R.S.A.	5	Manual Steering Gear Principles
Job	5	Adjust Steering Gear Lash
Job	5A	Remove, Overhaul and Replace Steering Gear
R.S.A.	6	Power Steering Principles
Job	6	Test Power Steering Assembly
Job	6A	Remove, Overhaul, Replace and Adjust Integral Power Steering Unit
Job	6B	Test and Repair Linkage-Type Power Steering System

UNIT VI–DRIVE TRAIN AND REAR SUSPENSION

R.S.A.	1	Rear Suspension Systems
Job	1	Remove, Service and Replace Coil Springs, Bushings and Shock Absorbers
Job	1A	Remove, Service and Replace Rear Leaf Springs
R.S.A.	2	Universal Joints and Drive Shafts
Job	2	Remove, Repair and Replace Universal Joint (Cross and Two-Yoke Type)
Job	2A	Remove, Repair and Replace Universal Joint (Constant Velocity Type)
Job	2B	Check Drive Shaft Alignment (Per Manufacturer's Specifications)
R.S.A.	3	Principles of the Differential
Job	3	Remove and Replace Rear Axle Seals and Bearings (Removable Carrier Type)
Job	3A	Remove and Replace Rear Axle Seals and Bearings (Integral Housing Type)
Job	3B	Disassemble, Reassemble and Adjust Differential (Removable Carrier Type)
Job	3C	Disassemble, Reassemble and Adjust Differential (Integral Housing Type)
R.S.A.	4	Differential Service
Job	4	Overhaul Differential (Instructor's Option)
R.S.A.	5	Limited Slip Differential
Job	5	Overhaul Limited Slip Differential

UNIT VII–MANUAL TRANSMISSIONS

R.S.A.	1	Principles of the Clutch
Job	1	Adjust Clutch Pedal Free-Play
Job	1A	Repair, Bleed and Adjust Hydraulic Clutch
R.S.A.	2	Clutch Service
Job	2	Remove and Replace Clutch
R.S.A.	3	Principles of Syncromesh Transmissions
Job	3	Adjust Gearshift Linkage
Job	3A	Disassemble and Assemble 3-Speed Syncromesh Transmission
Job	3B	Disassemble and Assemble 4-Speed Syncromesh Transmission
R.S.A.	4	Manual Transaxles
Job	4	Remove, Disassemble, Assemble and Replace Manual Transaxle

UNIT VIII—AUTOMATIC TRANSMISSIONS

R.S.A. 1 Automatic Transmission Principles
Job 1 Adjust Linkage/Perform Pressure Test, Change Fluid, Filter and Adjust Bands

R.S.A. 2 Power Glide
Job 2 Disassemble, Assemble and Adjust Power Glide Transmission

R.S.A. 3 Turbo-Hydromatic
Job 3 Disassemble, Assemble and Adjust Turbo-Hydromatic Transmission

R.S.A. 4 C-4 Ford
Job 4 Disassemble, Assemble and Adjust C-4 Ford Transmission

R.S.A. 5 C-6 Ford
Job 5 Disassemble, Assemble and Adjust C-6 Ford Transmission

R.S.A. 6 Torque Flite
Job 6 Disassemble, Assemble and Adjust Torque Flite Transmission

R.S.A. 7 Automatic Transaxles
Job 7 Remove, Disassemble, Assemble and Replace Automatic Transaxle

UNIT IX—FUEL SYSTEMS

R.S.A. 1 Automotive Fuel

R.S.A. 2 Fuel Tanks, Fuel Lines and Fuel Strainers or Filters
Job 2 Perform Maintenance on Fuel Lines and Fuel Tanks

R.S.A. 3 Fuel Pumps
Job 3 Test Fuel Pump (Use Vacuum Gauge and Tachometer)
Job 3A Remove and Replace Fuel Pump

R.S.A. 4 Principles of Carburetion
Job 4 Disassemble and Assemble a Mock-Up Carburetor (Dead Job)

R.S.A. 5 Special Devices
Job 5 Identify Special Devices

R.S.A. 6 Single-Barrel Carburetors
Job 6 Overhaul Single-Barrel Carburetor

R.S.A. 7 Two-Barrel Carburetors
Job 7 Overhaul Two-Barrel Carburetor

R.S.A. 8 Four-Barrel Carburetors
Job 8 Overhaul Four-Barrel Carburetor

R.S.A. 9 Variable-Venturi Carburetors
Job 9 Overhaul Variable-Venturi Carburetor

UNIT IX—FUEL SYSTEMS: Continued

R.S.A. 10 Fuel Injection Systems
Job 10 Check Operation of Fuel Injection System

R.S.A. 11 Introduction to Emissions Control Test Equipment
Job 11 To Adjust CO and HC Levels to Specifications

R.S.A. 12 Emission Control Systems
Job 12 Clean and Check Thermostatic Air Cleaner
Job 12A Test and Replace PCV Valve and Check Hose
Job 12B Test and Replace EGR Valve
Job 12C Test, Remove and Replace Air Injection Pump
Job 12D Test Fuel Evaporation System and Over-Fill Limiting Valve

R.S.A. 13 Catalytic Converters
Job 13 R & R Catalytic Converter
Job 13A Recharge Catalytic Converter

R.S.A. 14 Turbo Chargers

UNIT X—ELECTRICAL SYSTEMS

Part A: Basic Electricity

R.S.A. 1 Fundamentals of Electricity and Magnetism
Job 1 Identify Conductors and Insulators

R.S.A. 2 Electromagnetic Induction, Capacitors, Test Meters and Test Problems
Job 2 Use a Voltmeter, Ammeter and Ohmmeter

R.S.A. 3 Electrical Diagrams
Job 3 Identify Codes, Symbols and Size of Wire
Job 3A Trace Electrical Circuits

R.S.A. 4 Batteries
Job 4 Make Battery Capacity Test

Part B: Ignition Systems

R.S.A. 1 Primary Ignition Circuit (Conventional System)
Job 1 Remove and Replace Ignition Points, Test Coil and Condenser, and Set Dwell and Timing

R.S.A. 2 Secondary Ignition Circuit (Conventional System)
Job 2 Service Sparkplugs, High Tension Wires, Distributor Cap, Coil and Rotor
Job 2A Check Ignition Compression

R.S.A. 3 Electronic Ignition
Job 3 Test and Service an Electronic Ignition System

UNIT X—ELECTRICAL SYSTEMS: Continued

R.S.A.	4	Automotive Oscilloscope
Job	4	Interpret Automotive Oscilloscope Waveforms
R.S.A.	5	Ignition Advance and Retard
Job	5	Check Spark Advance and Retard Mechanisms
R.S.A.	6	Primary Circuit Resistance
Job	6	Check Ignition Resistor
Job	6A	Check Primary Circuit for Excessive Resistance
Job	6B	Remove and Replace Ignition Switch
R.S.A.	7	Manifold Vacuum
Job	7	Check Engine Manifold Vacuum—Gauge Interpretation
R.S.A.	8	Complete Diagnostic Tune-Up
Job	8	Perform Complete Diagnostic Tune-Up (Electronic Engine Tester)

Part C: Starting Systems

R.S.A.	1	Starting Motor Principles and Basic Circuits
Job	1	Test a Starter Circuit for Amperage, Insulation and Connection Resistance
Job	1A	Remove and Replace Starter
Job	1B	Test and Recondition an Automotive Starter
R.S.A.	2	Starter Drives
Job	2	Remove and Replace Starter Drive
R.S.A.	3	Starter Controls
Job	3	Service Starter Solenoid and Cables
Job	3A	Test Starter Circuit from Switch
Job	3B	Replace and Adjust Starter Neutral Switch

Part D: Charging Systems

R.S.A.	1	Operating Principles of AC Generators and Regulators
Job	1	Read Schematics
R.S.A.	2	Generating Systems
Job	2	Test AC Generator Output
Job	2A	Remove, Disassemble, Test, Repair and Replace Alternator
Job	2B	Check and Adjust Mechanical Voltage Regulator Assembly
Job	2C	Check and Service Transistor and/or Electronic Regulator Assembly
Job	2D	Check and Service Integral Regulator Assembly
R.S.A.	3	Charge Indicator Principles
Job	3	Check and Service Charge Indicator System

UNIT X–ELECTRICAL SYSTEMS–Continued

Part E–Chassis Electrical Systems

R.S.A. 1 Headlights–Wiring Diagrams and Circuits
Job 1 Install and Focus a Sealed Beam Headlight–Test for Voltage
Job 1A Service Headlight Doors

R.S.A. 2 Dimmer Switches
Job 2 Remove and Replace Dimmer Switch–Check for Voltage

R.S.A. 3 Headlight Switches
Job 3 Test for Voltage–Remove and Replace Headlight Switch–Replace High-Beam Indicator Bulb

R.S.A. 4 Taillight Circuits–Wiring Diagrams
Job 4 Check for Voltage and Short Circuits–Replace Bulb(s) In Taillight Circuit

R.S.A. 5 Stoplight Circuits–Wiring Diagrams
Job 5 Troubleshoot Stoplight Circuit
Job 5A Remove, Replace and Adjust Stoplight Switch

R.S.A. 6 Turn Signal/Hazard Circuits–Wiring Diagrams
Job 6 Troubleshoot Turn Signal/Hazard Lighting Circuit
Job 6A Remove and Replace Turn Signal Switch

R.S.A. 7 Horns and Horn Circuits
Job 7 Troubleshoot and Repair a Horn Circuit

R.S.A. 8 Engine Indicator Circuits–Wiring Diagrams
Job 8 Troubleshoot Oil Pressure, Alternator and Temperature Indicating Circuits

R.S.A. 9 Fuel Level Indicator Systems
Job 9 Test and Service Fuel Level Indicator System

R.S.A. 10 Windshield Wipers and Washers
Job 10 Service a Windshield Wiper/Washer Assembly
Job 10A Check Voltage in Windshield Wiper Circuit
Job 10B Remove and Replace Windshield Wiper Arms and Transmissions

UNIT XI–ENGINE REPAIRS

R.S.A. 1 Engine Fundamentals and Components
Job 1 Disassemble and Reassemble a Mock-Up Engine

UNIT XI—ENGINE REPAIRS: Continued

R.S.A.	2	Gaskets and Oil Seals
Job	2	Remove and Replace Valve Cover Gaskets
Job	2A	Remove and Replace Intake Manifold Gaskets
Job	2B	Remove and Replace Oil Pan Gasket (Engine in Car)
Job	2C	Remove and Replace Rear Main Oil Seal (Engine in Car)
Job	2D	Remove and Replace Front Cover Seal and/or Gasket
R.S.A.	3	Valve Train Mechanisms
Job	3	Adjust Valves—Mechanical
Job	3A	Adjust Valves—Hydraulic
Job	3B	Service Rocker Arm Assembly
Job	3C	Replace Valve Stem Seals (Engine in Car)
Job	3D	Service Valve Lifters
R.S.A.	4	Valve Reconditioning
Job	4	Recondition Valves, Valve Seats and Check Valve Guides Condition
R.S.A.	5	Valve Timing Mechanisms
Job	5	Remove and Replace Timing Chain or Gears
Job	5A	Remove and Replace Overhead Cam Timing Chain or Belt
Job	5B	Remove and Replace Cam Shaft
R.S.A.	6	Engine Mounts
Job	6	Remove and Replace Engine Mount (Engine in Car)
Job	6A	Remove and Replace Engine
R.S.A.	7	Engine Bearings
Job	7	Remove and Replace Connecting Rod Bearing (Check Clearances)
Job	7A	Remove and Replace Main Bearings (Check Clearances)
Job	7B	Service Engine Oil Pump
Job	7C	Remove and Replace Cam Bearings
R.S.A.	8	Cylinders, Pistons and Rings
Job	8	Check Cylinder and Piston Wear
Job	8A	Check Wrist Pin Wear, Connecting Rod Alignment
Job	8B	Remove and Replace Piston Rings
Job	8C	Recondition Cylinders (Instructor's Choice)
R.S.A.	9	Engine Overhaul
Job	9	Complete Engine Overhaul

UNIT XII—AIR CONDITIONING AND HEATING SYSTEMS

R.S.A.	1	Air Conditioning Fundamentals (Diagnosis)
Job	1	Check for Leaks and Perform Pressure Test
Job	1A	Discharge, Evacuate, Charge, and Leak Test
Job	1B	Remove and Replace Receiver Dryer—Evacuate and Recharge
Job	1C	Check and Service Evaporator Pressure Regulator Control Devices

UNIT XII—AIR CONDITIONING AND HEATING SYSTEMS: Continued

R.S.A.	2	Compressors
Job	2	Service Compressor
Job	2A	Remove and Replace Compressor Seal
Job	2B	Remove and Replace Compressor Hoses
Job	2C	Service Compressor Clutch
R.S.A.	3	Evaporators and Condensers
Job	3	Remove and Replace Evaporator—Evacuate and Charge—Test for Leaks
Job	3A	Remove and Replace Condensers—Evacuate and Charge—Test for Leaks
R.S.A.	4	Heaters
Job	4	Remove and Replace Water Control Valve
Job	4A	Remove and Replace Heater Core
R.S.A.	5	Electrical, Mechanical and Vacuum Control Devices
Job	5	Check Voltage at Fuse Box
Job	5A	Check Voltage at Switch—Remove and Replace Switch
Job	5B	Check Voltage at Blower Motor—Remove and Replace Motor
Job	5C	Check and Adjust Air Doors and Controls
Job	5D	Service Vacuum Servos

UNIT XIII—ACCESSORIES

R.S.A.	1	Speedometer and Speedometer Drives
Job	1	Remove, Clean, Lubricate and Replace Speedometer Cable
Job	1A	Remove and Replace Speedometer Cable and Housing
Job	1B	Remove and Replace Speedometer
R.S.A.	2	Power Seats
Job	2	Diagnose and Troubleshoot Power Seats
Job	2A	Remove and Replace Power Seat Control Switch—Check for Voltage
Job	2B	Check for Voltage at Motor
Job	2C	Remove and Replace Power Seat Motor
Job	2D	Lubricate Power Seat Mechanism
R.S.A.	3	Power Windows and Door Locks
Job	3	Diagnose and Troubleshoot Power Windows and Door Locks
Job	3A	Check for Voltage and Remove and Replace Power Window Master Switch
Job	3B	Check for Voltage and Remove and Replace Power Window Door Switch
Job	3C	Remove and Replace Power Window Motor and Regulator
R.S.A.	4	Speed Controls
Job	4	Diagnose and Troubleshoot Speed Controls
Job	4A	Test and Repair Speed Control
R.S.A.	5	AM and FM Radios, Tape Players and Speakers
Job	5	Check Voltage at Radio
Job	5A	Check Antenna and/or Speaker
Job	5B	Remove and/or Replace Radio

UNIT XIV–COMPLETE AUTOMOTIVE SERVICE

R.S.A.	1	Automotive Safety Inspection
Job	1	Perform Automotive Safety Inspection
R.S.A.	2	Complete Automotive Engine Analysis
Job	2	Perform Complete Automotive Engine Analysis
R.S.A.	3	Seasonal Maintenance
Job	3	Perform Summer Season Service
Job	3A	Perform Winter Season Service
R.S.A.	4	Customer Relations and Job Hunting
Job	4	Fill Out a Personal Resume'
Job	4A	Participate in a Mock Job Interview

UNIT XV–WELDING

R.S.A.	1	Oxyacetylene Welding
Job	1	Setting Up Oxyacetylene Welding Apparatus
R.S.A.	2	Welding Steel
Job	2	Run Beads, Flat Position 1/8" Material
Job	2A	Flat Position Butt Weld 1/8" Material
R.S.A.	3	Flame Cutting
Job	3	Hand Cut 1/2" Material
R.S.A.	4	Bronze Welding
Job	4	Flat Position Bronze Butt Welding 1/8" Material
Job	4A	Bronze Weld Cast Iron Plate
R.S.A.	5	Oxyacetylene Soldering
Job	5	Repair Radiator
R.S.A.	6	Electric Arc Welding
Job	6	Set Up Welding Machine and Strike Arc
Job	6A	Run Continuous Stringer Beads, Flat Position 1/4" Material
Job	6B	Lap Joint, Weld Flat Position 1/4" Material

UNIT XVI–MATHEMATICS

AUTOMOTIVE MECHANICS CURRICULUM

Required Textbook

TITLE	SOURCE
William H. Crouse AUTOMOTIVE MECHANICS, 1980 Ed.	Gregg/McGraw-Hill Book Company

Required Resource References

TITLE	SOURCE
Martin Stockel AUTO MECHANICS FUNDAMENTALS 1978 Ed.	Goodheart-Willcox Co., Inc.
Martin Stockel AUTO SERVICE AND REPAIR, 1978 Ed.	Goodheart-Willcox Co., Inc.
Toboldt and Johnson AUTOMOTIVE ENCYCLOPEDIA 1981 Ed.	Goodheart-Willcox Co., Inc.
AUTOMOTIVE MANUFACTURERS' SERVICE MANUALS	
CHILTON'S AUTO REPAIR MANUALS	
MOTOR'S AUTO REPAIR MANUALS	
MOTOR'S TRUCK REPAIR MANUALS	
MITCHELL MANUALS	
William H. Crouse AUTOMOTIVE ELECTRONICS & ELECTRICAL EQUIPMENT, 9th Ed.	Gregg/McGraw-Hill Book Company